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ABSTRACT

Listening is a crucial element in the communication process. To date, however, research efforts have been unsuccessful in identifying the proper role that listening should play in the building of communication theory. To be a legitimate part of the communication process, listening must be placed in a conceptual framework similar to those found in the human information processing literature. Such a framework divides auditory perception and message comprehension (listening) into three parts: signal processing, literal processing, and reflective processing. Signal processing in human listening begins the language processing task, in which listeners engage their language competence to understand the phonetic, syntactic and semantic characteristics of the message. This process is brought to fruition during the next two phases of comprehension. During literal processing the listener is attempting to understand the basic meaning of the utterance while during reflective processing the listener thinks about the message, makes more extensive inferences, and evaluates and judges the speaker and the message. The way these components are activated is a function of the listening strategies employed. There is no one fixed listening strategy because listening is primarily a problem solving task ("What does the speaker mean?") Future research needs to focus on the three phases of the human information processing model and on the kinds of listening strategies that people naturally employ. (HOD)

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LISTENING TO LANGUAGE:
An Information Processing Perspective

by

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Perhaps no other area of research in communication has received more criticism for conceptual sloppiness than has the listening area. Few of us doubt that listening is a crucial element in the communication process, but to date, we have been unsuccessful in identifying the proper role that listening should play in our theory building about communication. I believe that part of our problem with listening is that past researchers have not cast listening into a larger conceptual framework.

The purpose of this paper is to propose that listening can best be viewed as a human information processing system. And if we will turn our research interests toward unpacking this information processing system, we might discover the unique characteristics of listening that will afford it a rightful place in our theory building.

To do this, I will look briefly at the problem, offer a definition of listening (especially listening to language), explain my information processing model of listening, and consider the natural strategies of listening that take place when people interact together.

Problem

One of the problems with current practices in listening is overcommercialization. This can be observed in the "Dale Carnegie" approach that some listening consultants employ. This kind of prescriptive, humanistically-based advice on how to listen better can lead to a false sense of security among the consumers that listening experts know, in fact, what they are talking about. To many, better listening means better human relations,

higher profits, and a happier life. Yet we have no published data to warrant such a claim. It is, at best, a statement of belief not a statement of fact.

Because of the commercialization of listening we have also experienced conceptual confusion between listening and other terms like communication, understanding, and recall. For instance, Barker's definition is widely accepted as one of the best conceptions of listening available. He defines listening as "the selective process of attending to, hearing, understanding, and remembering aural symbols" (Barker, 1971, p. 17). Yet if you delete the word "aural" you have a definition of communication or perhaps comprehension (the selective process of attending to, hearing, understanding, and remembering symbols). Thus, one word (aural) separates listening from communication. The conceptual confusion is made even fuzzier when you define listening more loosely as Brooks (1978) does when he writes that listening is "a combination of what we hear, what we understand, and what we remember" (p. 91). Until listening is uniquely defined so that it is clearly distinguished from other concepts, we will remain unsure about the proper domain of listening in the field of communication.

The second problem plaguing our understanding of human listening is the apparent deadend that research in listening has reached. This is most noted in research on listening tests. As popular as the Brown-Carlsen test or the SLEP test are, they do not seem to be successful measures of listening. This was cogently pointed out by Kelly (1963) who administered the above two listening tests along with a reading test and an intelligence test only to discover that the listening tests did not correlate as well with each other as they did with the reading test and intelligence test. Thus Kelly concludes that the listening tests' "construct validity is highly questionable" (p. 143). Devine

(1967) also found that these popular listening tests were weak in both reliability and validity.

Fortunately, though, recent work by Bostrom and Waldhart (1980) may rectify some of the measurement problems associated with listening tests. The Kentucky Comprehensive Listening Test, developed by Bostrom and Waldhart, measures listening in three ways: short-term listening, short-term listening with rehearsal, and long-term listening. According to Bostrom, short-term listening (STL) because of its brevity (15 seconds or less) should not covary with mental abilities such as intelligence. Luckily, the 1980 study by Bostrom and Waldhart found that STL correlated very little with the listeners' ACT scores. Given the relative merits of ACT scores as a measure of intelligence, this result may be encouraging. If it keeps up in future research, we may have a listening test that is not highly correlated with intelligence.

In spite of the overcommercialization of listening and the temporary setbacks experienced in measuring listening, we can still study listening as a legitimate part of the communication process. But to do so, we will need a conceptual framework that systematically and objectively deals with listening. Such a framework can be found in the human information processing literature. Given a definition that focuses on the main task of listening (determining the speaker's meaning) and given an overall model of listening as information processing, we can direct our future research efforts to ferreting out the important elements of the listening act.

Definition and Assumptions

Just as speaking is more than making sounds orally, listening is more than hearing. Applied to listening to language, listening can be defined as the process of taking what you hear and organizing it into verbal units to which you can apply meaning (Goss, 1982). Thus, listening requires that you

structure the sounds that you hear and organize them into words, phrases, sentences, or other linguistic units. In this sense, listening is a spoken language perception problem that depends on your ability to decipher the spoken code and segment it into meaningful parts.

In the next section, I will present a model of listening, but before doing so let me state three assumptions which guide my thinking about listening:

1. Listening is a multistage process.
2. Listening is distinctively different from reading.
3. Listening has active and not-so-active aspects.

In essence, the above assumptions suggest that there is a uniquely complex process called listening that can be isolated and studied scientifically. To do so, however, we need to avoid the conceptual confusions of earlier works and identify clearly the uniqueness of listening when compared to other decoding processes such as reading. Finally, as Berger and Douglas (1982) recently made clear, as people interact through speaking and listening, they do so with varying levels of awareness, suggesting that some aspects of listening are more actively directed than others.

With these assumptions and with the earlier definition of listening, we can turn to a model of listening as it might be seen from an information processing perspective.

Model

Psychologists tell us that listening includes auditory perception and message comprehension. As the model in figure 1 shows, my information processing perspective to listening divides auditory perception and message comprehension into three parts: signal processing (SP), literal processing (LP), and reflective processing (RP). SP is equated with auditory perception, while message comprehension is subdivided into LP and RP.

L I S T E N I N G

Auditory Perception	Comprehension	
SP	**LP**	**RP**
SIGNAL PROCESSING	LITERAL PROCESSING	REFLECTIVE PROCESSING
segments structures	meaning simple implications	critical analysis appreciation

(phonetic--syntactic--semantic) ——————→

Doesn't vary with intelligence — — — — — — — — — — Does vary with intelligence

Figure 1 : Goss Model of Listening

Auditory perception is defined by Witkin (1969) as involving "focus, attention, tracking, sorting, scanning, comparing, retrieving, and sequencing of spoken messages at the moment of utterance" (p. 54). The important part of Witkin's definition is the last part "at the moment of utterance." Auditory perception (or SP) demands impromptu on-the-spot, analysis of the spoken word. More simply stated, the initial phase of listening involves segmenting the speech signal into units that are potentially meaningful. For instance, the expression "Itrainedlastnight" can be segmented and structured into two possible arrangements: "It rained last night" or "I trained last night." Fortunately, when properly articulated, the listener should have little difficulty deciding which arrangement is correct. That is, if the listener is competent in the language spoken. If not, he or she may not have the foggiest idea how to partition the stream of speech. This is something that I encountered at the ICA convention in Acapulco when negotiating cab fares with indigenous cab drivers. Most of the time, I couldn't make out their Spanish. Had I paid more attention years ago to my high school Spanish teacher I might not have had this auditory perception problem.

In keeping with the human information processing perspective, I call auditory perception, signal processing (SP). Since the main focus of attention at the earliest stage of listening is on the signal itself, the term signal processing makes sense. This does not presume, though, that the listener is processing the signal without regard to the symbolic aspects of the message, as would a radio receiver which simply receives the signal and then projects it through a speaker system. Rather, signal processing in human listening begins the language processing task, in which listeners engage their language competence to understand the phonetic, syntactic, and semantic characteristics of the message. Admittedly, this process is just beginning during signal

processing. It is brought to fruition during the next two phases of comprehension.

Literal processing (LP) is the next step. It refers to the initial assignment of meaning to the message parts by the listener. This phase of comprehension is primarily referential, in that the listener is attempting to understand the basic meaning of the utterance. The listener, at this point, is not very evaluative, and any inferences that occur during literal processing are simply a function of the listener's basic understanding of the utterance. Such inferences or implications would be simple and sensical (logical?). For instance, if you hear me say "Please close the door" you can safely infer that there will be a door to close (an inference) when you fulfill my request.

Once the listeners have a basic understanding of the message, they can respond more reflectively, thus beginning reflective processing (RP). This phase of comprehension is deeper than literal processing in that the listeners think about the message, make more extensive inferences, evaluate and judge the speaker and the message, etc. This level of processing leads to critical listening and appreciative listening (Lunsteen, 1971). It also takes more time than the earlier stages of listening. And given that it is a deeper level of comprehension, it would be dependent on the listeners' intellectual abilities. In fact, Witkin (1969) argues that the later stages of processing are more dependent on intelligence than earlier stages. So we would expect that the more the listening task calls for deep processing, the more it will depend on the I.Q. of the listeners.

In summary, then, a human information processing approach to listening sees it as a three part perception and comprehension process that is identified as signal processing (SP), literal processing (LP) and reflective processing (RP). Although presented in a linear fashion, the listening process

(especially for well learned messages) is so rapid that linearity may be difficult to observe. In any event, how these components are activated is a function of the listening strategies employed. It is to that concern that we now turn our attention.

Listening Strategies

The title of this section of the paper is deliberate in its use of the plural form "strategies." There is no one fixed listening strategy, because listening is primarily a problem-solving task. In other words, when I listen to you, I am trying to answer the question "What does the speaker mean?" And in my attempt to resolve this question, I may exert varying amounts of effort. In fact, Hasher and Zacks (1979) report that people listen with varying degrees of attention. Thus, some aspects of the message may drain minimal energy resources from our attention mechanisms. These call for automatic processing, according to Hasher and Zacks. Other aspects of the message may require more careful listening (more RP perhaps) and thus call for effortful processing. An example of automatic processing would be keeping track of the flow of information, while effortful processing might include rehearsing the message in your mind, or attempting to memorize exactly what the speaker is saying. In any listening situation, there will be automatic and effortful processing.

Even though each listening situation is somewhat unique and each requires varying amounts of automatic and effortful processing, Aronson (1974) has identified three principles of listening which seem to apply to most interpersonal listening situations. First, Aronson observed that people use the pauses found in a speaker's natural speaking pattern to process what is being said. They take the very brief time afforded by pauses to decipher the message. This does not mean that listeners wait for pauses before processig the message. They process the message as it is being said, but they use the

pauses to think about the message rather than waiting for the next point. If there are not enough pauses or if the pauses are not sufficient in length, listening is made more difficult. Likewise, too many pauses or pauses of too long a duration bog down the speech perception process.

Second, Aronson found that the relative level of redundancy and predictability of our language allows time to process the content of the sentences. In other words, when two people interact with each other, they do not have to search for the meaning of each word. They need to listen for the content words, which carry the main ideas, while monitoring the other words, which serve primarily a grammatical function. This means that people don't need to understand each word thoroughly to comprehend the sentence. In fact, research shows that it is possible to eliminate just about every other word from a message without seriously harming the listener's understanding of the message. When faced with such mutilated messages, listeners fill in what they think is missing and thus comprehend the message (Taylor 1956). If our language were not as predictable as it is, people could not do this.

Finally, Aronson notes that listening probably involves a rapid predit-then-confirm strategy. Given the amount of time provided in normal conversation by pauses and redundancy, you are apparently able to predict what is coming up in a sentence and then wait to see if it occurs. Most of the time, your predictions are correct. You may not hit the exact words, but you should be able to identify and project the general ideas. When you fail to predict correctly, it is typically due to your own ignorance about the topic. The more you know about what the speaker is talking about, the easier it will be for you to predict. You might also be unsuccessful in predicting the outcome of a sentence because of humor. If someone is trying to be funny and you don't realize it, you might be caught off guard by the punch line.

Effective humor is based upon upsetting the normal predict-then-confirm strategy of listening. What makes you laugh at a joke is the surprise you encounter at the end of it. The predict-then-confirm strategy of listening indicates that listening is a guessing game. As long as things remain predictable, you can guess correctly, and thus listen effectively.

At any point, then, in a speaker's stream of speech the listener is simutaneously predicting upcoming thoughts while confirming previous predictions. And this is accomplished while the listener is hearing the spoken message. Consequently, hearing is straddled by prediction and confirmation. Fortunately, predicting and confirming do not call for equal amounts of energy or effort. You need more effort to predict than to confirm. Thus, these can be accomplished simultaneously. Finally, confirming in listening is similar to self-feedback in speaking. Just as speakers check their own speech output, listeners check through confirmation their predictions.

Although the predict-then-confirm strategy that Aronson proposes is generally applicable to all listening situations, it is still flexible enough to be altered by the specific listening task, or the specific question that needs to be answered. For instance, if the listeners are looking for the higher order structures of a message, then the predict-then-confirm strategy will be focused on the recurring themes of the message, or for the overall points and arguments in the message. For lower order structures, the predict-then-confirm strategy will be more concerned with the surface structures of the message (the words, phrases, etc.). Both higher and lower order structures, then, can be listened for by the predict-then-confirm strategy.

Sometimes the best strategy for listening is one that is focused on discovering one aspect of the message. For instance, you may be looking for a

specific point being made, or you might be trying to discern if the speaker has any interpersonal interest in you, or you might be waiting for a punchline to a joke, or you might be on guard for any contradictions (or deceptions) in the speaker's message. These specific purposes, however, do not change the basic listening strategy. They simply overlay the fundamental process of discovering what the speaker means.

Summary

Looking back, you can see that listening is a problem-solving task that is centered on answering the question "What does the speaker mean?" By taking a simple human information processing approach, you can study the listening process as an information system, without regard to the "goodness" of "effective listening." You can also see listening as a three phase process of SP, LP, and RP. Furthermore, it should be clear that any particular listening strategy will be guided by the predict-then-confirm pattern but will be determined by the specific task at hand. Thus, a competent listener will be one with many strategies and an ability to know when to use which strategy.

If future research will focus on the three phases of SP, LP, and RP, and on the kinds of listening strategies that people naturally employ, then our knowledge of the listening process might grow substantially. Obviously, this growth will depend on the creativity and pureness of focus of the researchers of tomorrow.

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